

register, all of the bits are examined sequentially and upon detecting a sequence of bits, replacing the bits predetermined value and transmitting the value in-place of the bits. The Examiner concludes that it would have been obvious to a person with ordinary skill in the art to insert a bit after any amount of consecutive identical bits given the teachings of Gromen because the number of bits being replaced (2 or 8) does not change the scope of the invention.

Applicants respectfully submit for the reasons below that claims 1-7 are patentably distinguishable over Gromer.

Although Gromer and the present invention both transmit SYNC symbols in their respective signal processing apparatus, the conditions under which such SYNC symbols are used are completely different and render claims 1-7 patentable over Gromer.

In accordance with the present invention as defined by the claims, a method and apparatus are disclosed in which a data stream of digital words are monitored at a transmit end and, upon the occurrence of two consecutive identical words, the second-occurring word is replaced by a SYNC symbol. Thus, the presence of a SYNC symbol indicates the occurrence of two consecutive identical digital words. The identity may exist regardless of the number of bits currently used to define each word or the specific bit pattern of the word. At a receive end, data recovery is perfect since a SYNC symbol is simply replaced by the digital word immediately preceding it (i.e., the first-occurring one of the two consecutive, identical words) in the transmit sequence.

However, Gromen neither teaches nor suggests using a SYNC symbol to replace the second-occurring one of the two

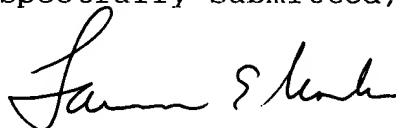
consecutive, identical digital words. Rather, the SYNC symbol is used merely to indicate the beginning of a word transmission (i.e., it functions conventionally as a data boundary), and to indicate that the remaining bits of a word to be transmitted consist of an all-ZERO sequence.

As taught by Gromen, the transmission of a word having a multiplicity of bits is initiated with a SYNC symbol. (see col. 4, lines 49-52). Next, a bit-by-bit analysis of the word's bit sequence is performed to determine what signals are to be transmitted. Each bit, beginning sequentially with the right-most bit, is detected and if the detected bit is a ZERO, a DATA 0 signal is sent and if the detected bit is a ONE, a DATA 1 signal is sent. After each bit detection and transmission of, the representative signal, the remaining undetected bits are sensed to determine if they are an all-ZERO sequence. If not, a GAP signal is sent, a bit shift is performed, and the next bit in the sequence is detected. If, however, the sensing operation indicates that the remaining undetected bits are an all-ZERO sequence, a SYNC symbol is transmitted to complete the transmit operation for that word. Clearly, Gromen does not use a SYNC symbol to replace the second-occurring one of two consecutive, identical digital words. Rather, Gromen uses a SYNC symbol to indicate that the remaining bits in a digital word correspond to an all-ZERO sequence, whatever its length may be.

Applicants believe that claims 1-7 are patentable over Gromer, and respectfully request that this rejection be withdrawn.

Applicants believe that this application is in condition for allowance and respectfully request that such action be taken.

Respectfully submitted,



Lawrence E. Monks
Attorney for Applicants
Registration No. 34,224

GTE Telecommunications
Products and Services
40 Sylvan Road - MS #31
Waltham, MA 02254
(617) 466-4013
FAX: (617) 466-4021

enc.